

THE CLAIMS

What is claimed is:

1. A multilayer web article, comprising:

a first layer of a porous material; and

a second layer overlying and sealed to the first layer, said second layer (i) being non-porous to passage of gas therethrough and (ii) comprising a peelable film in contact with the first layer of porous material, said peelable film permitting peeling removal of the second layer from the first layer to expose the first layer of porous material for passage of gas therethrough.

2. The multilayer web article of claim 1, wherein said first layer comprises a material selected from the group consisting of cellulosic and synthetic polymeric materials.

3. The multilayer web article of claim 2, wherein said first layer comprises a cellulosic material.

4. The multilayer web article of claim 3, wherein said cellulosic material comprises paper.

5. The multilayer web article of claim 2, wherein said first layer comprises a synthetic polymeric material.

6. The multilayer web article of claim 5, wherein said synthetic polymeric material comprises polyethylene.

7. The multilayer web article of claim 6, wherein the polyethylene comprises high-density polyethylene.

8. The multilayer web article of claim 1, wherein said first layer comprises a flash-spun and bonded polymeric fibrous web.

9. The multilayer web article of claim 8, wherein said web comprises high density polyethylene fiber.

10. The multilayer web article of claim 1, wherein said first layer comprises a porous web of a material selected from the group consisting of polyethylene, polysulfone, polyimide, polypropylene, polybutylene, polyvinylchloride, polyurethane, and polystyrene.

11. The multilayer web article of claim 1, wherein said first layer comprises a Tyvek® film.

12. The multilayer web article of claim 1, wherein the peelable film comprises a synthetic resin polymeric film.

13. The multilayer web article of claim 12, wherein the synthetic resin polymeric film comprises polyethylene film.

14. The multilayer web article of claim 1, wherein the second layer further comprises a backing layer secured to the peelable film.

15. The multilayer web article of claim 14, wherein the backing layer comprises a synthetic resin material.

16. The multilayer web article of claim 15, wherein the backing layer synthetic resin material comprises polyethylene.

17. The multilayer web article of claim 1, as incorporated in packaging as a structural component thereof.

18. The multilayer web article of claim 17, wherein the packaging comprises a bag adapted to hold a product article therein.

19. The multilayer web article of claim 17, wherein the packaging comprises a containment structure for a product article that must be sterile in end usage thereof.

20. The multilayer web article of claim 19, wherein the product article comprises a medical device.

21. The multilayer web article of claim 19, wherein the product article comprises a pharmaceutical agent.

22. A packaging article useful for pressurization integrity testing and after pressurization integrity testing being permeable to sterilant gas for sterile packaging of a product article disposable therein, said packaging article comprising:

a sheet form structural component including: a first layer of a porous material that is permeable to passage of sterilant gas therethrough in exposure to a sterilant gas environment; and a second layer overlying and sealed to the first layer,

said second layer (i) being non-porous to passage of said sterilant gas therethrough and (ii) comprising a peelable film in contact with the first layer of porous material, said peelable film permitting peeling removal of the second layer from the first layer to expose the first layer of porous material for passage of said sterilant gas therethrough.

23. The packaging article of claim 22, wherein said first layer comprises a cellulosic material.

24. The packaging article of claim 23, wherein said cellulosic material comprises paper.
25. The packaging article of claim 22, wherein said first layer comprises a synthetic polymeric material.
26. The packaging article of claim 25, wherein said synthetic polymeric material comprises polyethylene.
27. The packaging article of claim 26, wherein the polyethylene comprises high-density polyethylene.
28. The packaging article of claim 22, wherein said first layer comprises a flash-spun and bonded polymeric fibrous web.
29. The packaging article of claim 28, wherein said web comprises high density polyethylene fiber.
30. The packaging article of claim 22, wherein said first layer comprises a porous web of a material selected from the group consisting of polyethylene, polysulfone, polyimide, polypropylene, polybutylene, polyvinylchloride, polyurethane, and polystyrene.
31. The packaging article of claim 22, wherein said first layer comprises a Tyvek® film.
32. The packaging article of claim 22, wherein the peelable film comprises a synthetic resin polymeric film.
33. The packaging article of claim 32, wherein the synthetic resin polymeric film comprises polyethylene film.

34. The packaging article of claim 22, wherein the second layer further comprises a backing layer secured to the peelable film.

35. The packaging article of claim 34, wherein the backing layer comprises a synthetic resin material.

36. The packaging article of claim 35, wherein the backing layer synthetic resin material comprises polyethylene.

37. The packaging article of claim 22, further comprising a non-porous structural component, joined to said sheet form structural component to form therewith an enclosure for containment of said product article.

38. The packaging article of claim 37, wherein said non-porous structural component is of sheet form.

39. The packaging article of claim 37, wherein said non-porous structural component comprises a shaped member bonded to said sheet form structural component and forming therewith an enclosed interior volume for containment of said product article therein.

40. The packaging article of claim 22, comprising a bag adapted to hold said product article therein.

41. The packaging article of claim 40, wherein said bag comprises a non-porous polyethylene sheet bonded along an edge region thereof to said non-porous structural component.

42. The packaging article of claim 41, wherein said non-porous structural component comprises a Tyvek® film as said first layer, and said peelable film comprises a polyethylene film.
43. The packaging article of claim 22, having a product article packaged therein.
44. The packaging article of claim 43, wherein said product article must be sterile in end usage thereof.
45. The packaging article of claim 44, wherein said product article comprises a medical device.
46. The packaging article of claim 44, wherein the product article comprises a pharmaceutical agent.
47. The packaging article of claim 22, comprising a bag including said sheet form structural component as a panel of the bag, wherein the sheet form structural component is bonded at an edge region of said first layer to a non-porous panel to form therewith an enclosed interior volume for holding said product article, wherein said first layer comprises Tyvek® film, said second layer comprises a peelable polyethylene film, and said non-porous panel is formed of polyethylene film.
48. The packaging article of claim 47, wherein the bonded edge region has a bond strength greater than about 20 Newtons per 15 millimeter bonded edge region width.
49. The packaging article of claim 48, wherein the second layer is sealed to the first layer with a seal strength in a range of from about 1 to about 8 Newtons per 15 millimeters seal width.
50. A method of integrity testing a packaging article by pressure retention testing and rendering said packaging article permeable to sterilant gas for sterile packaging of a product article

therein after said pressure retention testing, and sterilizing the packaging, said method comprising:

(a) fabricating said packaging article with a sheet form structural component including: a first layer of a porous material that is permeable to passage of sterilant gas therethrough in exposure to a sterilant gas environment; and a second layer overlying and sealed to the first layer, wherein said second layer (i) is non-porous to passage of said sterilant gas therethrough and (ii) comprises a peelable film in contact with the first layer of porous material, said peelable film permitting peeling removal of the second layer from the first layer to expose the first layer of porous material for passage of said sterilant gas therethrough;

(b) pressurizing said packaging article by a compressed gas and monitoring pressure retention by the packaging article to determine its integrity;

(c) after completion of step (b) with a verification of said integrity, peelingly removing the second layer from the first layer to expose the first layer of porous material for passage of said sterilant gas therethrough; and

(d) after step (c), exposing said packaging article to said sterilant gas to sterilize said packaging article.

51. The method of claim 50, wherein step (d) is carried out after packaging of said product article with said packaging article.

52. The method of claim 50, wherein said sterilant gas comprises steam and/or ETO.

53. The method of claim 50, wherein said sterilant gas comprises steam.

54. The method of claim 50, wherein said sterilant gas comprises ETO.
55. The method of claim 50, wherein said first layer comprises a cellulosic material.
56. The method of claim 55, wherein said cellulosic material comprises paper.
57. The method of claim 50, wherein said first layer comprises a synthetic polymeric material.
58. The method of claim 57, wherein said synthetic polymeric material comprises polyethylene.
59. The method of claim 58, wherein the polyethylene comprises high-density polyethylene.
60. The method of claim 50, wherein said first layer comprises a flash-spun and bonded polymeric fibrous web.
61. The method of claim 60, wherein said web comprises high-density polyethylene fiber.
62. The method of claim 50, wherein said first layer comprises a porous web of a material selected from the group consisting of polyethylene, polysulfone, polyimide, polypropylene, polybutylene, polyvinylchloride, polyurethane, and polystyrene.
63. The method of claim 50, wherein said first layer comprises a Tyvek® film.
64. The method of claim 50, wherein the peelable film comprises a synthetic resin polymeric film.
65. The method of claim 64, wherein the synthetic resin polymeric film comprises polyethylene film.

66. The method of claim 50, wherein the second layer further comprises a backing layer secured to the peelable film.

67. The method of claim 66, wherein the backing layer comprises a synthetic resin material.

68. The method of claim 67, wherein the backing layer synthetic resin material comprises polyethylene.

69. The method of claim 50, wherein the packaging article further comprises a non-porous structural component, joined to said sheet form structural component to form therewith an enclosure for containment of said product article.

70. The method of claim 69, wherein said non-porous structural component is of sheet form.

71. The method of claim 69, wherein said non-porous structural component comprises a shaped member bonded to said sheet form structural component and forming therewith an enclosed interior volume for containment of said product article therein.

72. The method of claim 50, wherein the packaging article comprises a bag adapted to hold said product article therein.

73. The method of claim 72, wherein said bag comprises a non-porous polyethylene sheet bonded along an edge region thereof to said non-porous structural component.

74. The method of claim 73, wherein said non-porous structural component comprises a Tyvek® film as said first layer, and said peelable film comprises a polyethylene film.

75. The method of claim 50, wherein said product article comprises a medical device.

76. The method of claim 50, wherein the product article comprises a pharmaceutical agent.

77. The method of claim 50, wherein the packaging article comprises a bag including said sheet form structural component as a panel of the bag, wherein the sheet form structural component is bonded at an edge region of said first layer to a non-porous panel to form therewith an enclosed interior volume for holding said product article, wherein said first layer comprises Tyvek® film, said second layer comprises a peelable polyethylene film, and said non-porous panel is formed of polyethylene film.

78. The method of claim 77, wherein the bonded edge region has a bond strength greater than about 20 Newtons per 15 millimeter bonded edge region width.

79. The method of claim 78, wherein the second layer is sealed to the first layer with a seal strength in a range of from about 1 to about 8 Newtons per 15 millimeters seal width.